

PATENT ABSTRACTS OF JAPAN

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(54) METHOD, SYSTEM AND SERVER FOR DISTRIBUTING INFORMATION,  
TERMINAL DEVICE AND RECORDING MEDIUM

(57)Abstract:

PROBLEM TO BE SOLVED: To generate differential information from information subjected to version up and its old information and to provide information distribution processing to be transmitted to a terminal device.

SOLUTION: In this information distribution system provided with a function on a server, which transmits held information to the terminal device according to access from the terminal device, a server computer has a differential information generating means which has the information subjected to version up and its old information among pieces of held information and generates the differential information with the old information

and the information subjected to version up, and the terminal device has a means for performing version up of information held by the terminal device into the latest information and generates information subjected to version up on the basis of the differential information and the information held by the terminal device when the differential information is transmitted from the server computer.

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## CLAIMS

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[Claim(s)]

[Claim 1] It is the information distribution approach of transmitting the information currently held according to access from a terminal equipment to a terminal equipment. From the information upgraded among the information currently held, and its old information to the file list for deletion The file list for an addition and the file list for updating are created. Further The information distribution approach characterized by creating an addition-file stereo and an update file stereo from the upgraded information and its old information, and transmitting said list and stereo which were created to said terminal equipment.

[Claim 2] In the information distribution system equipped with the function to transmit the information currently held according to access from a terminal equipment on a server to said terminal equipment said server computer It has

the information upgraded among the information currently held, and its old information. It has an information generation means. said old information and said upgraded information -- difference -- the difference which generates information -- said terminal equipment a means to upgrade the information which said terminal equipment holds to the newest information -- having -- the difference from said server computer, when information is transmitted the difference -- the information distribution system characterized by generating said upgraded information based on the information which information and said terminal equipment hold.

[Claim 3] the difference from the information which is the information distribution server equipped with the function transmit the information currently held according to access from a terminal equipment to a terminal equipment, and was upgraded among the information currently held, and its old information -- the difference which generates information -- an information generation means and the difference from a terminal equipment -- an information Request to Send -- said difference -- the information distribution server characterized by to have a transmitting means transmit information.

[Claim 4] It is the terminal equipment which downloads the information on a

server and upgrades information. the case where the versions of the information on a server and the information on said terminal equipment differ -- the difference of the information on said server, and the information on said terminal -- the difference which carries out an informational Request to Send -- with an information-requirements means said difference -- the difference transmitted from said server by the information-requirements means -- the terminal equipment characterized by having a newest information generation means to generate version up information by compounding the information which information and said terminal equipment hold.

[Claim 5] It is the record medium which recorded the program which transmits the information currently held according to access from a terminal equipment to a terminal equipment. The function which creates the file list for deletion, the file list for an addition, and the file list for updating from the information upgraded among the information currently held, and its old information, Furthermore, the function which creates an addition-file stereo and an update file stereo from the upgraded information and its old information, The record medium which recorded the program for information distribution processing control for realizing

the function to transmit said list and stereo which were created to said terminal equipment and in which computer reading is possible.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates the software in a NETTO work-piece computer to the information distribution approach which can download efficiently, an information distribution system, an information distribution server, a terminal equipment, and a record medium.

[0002]

[Description of the Prior Art] In recent years, mobile-ization of information machines and equipment is progressing remarkably, and it walks around with the terminal equipment more often to various places. A user connects a terminal equipment to a server predetermined with wireless or a cable from a destination, and is performing the communication link etc. Especially the device called a network computer needed to equip the terminal body only with the minimum hardware, needed to perform software by the server, or needed to download and use software for the terminal body.

[0003]

[Problem(s) to be Solved by the Invention] However, in the above file distribution systems, since all the files that constitute software were downloaded each time, the warm-up time of the software included to download became large, and the

user-friendliness of the software which consists of big file sizes as a whole was getting worse. Moreover, employment using a low speed telephone line circuit also had problems, like implementation becomes difficult. Moreover, since it was necessary to download all the files that constitute the software when the software by the side of a server is updated in the mobile network computer which gave local storage, such as a hard disk and a flash memory, to the network computer side, in order to avoid downloading a file required at the time of a network computer startup each time, there was the same problem as the above. the difference from the information which this invention was made in view of said situation, and was upgraded, and its old information -- information is generated and it is in offering the information distribution approach transmitted to a terminal equipment. moreover -- a server side -- difference -- information -- creating -- a terminal-equipment side -- the difference -- it is in offering the information distribution system and record medium which compound information and old information and generate new information.

[0004]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, (1) This invention It is the information distribution approach of



transmitting the information currently held according to access from a terminal equipment to a terminal equipment. From the information upgraded among the information currently held, and its old information to the file list for deletion The file list for an addition and the file list for updating are created. Further It is the information distribution approach characterized by creating an addition-file stereo and an update file stereo from the upgraded information and its old information, and transmitting said list and stereo which were created to said terminal equipment. therefore, the difference from the information to which this invention was upgraded, and its old information -- contraction-izing of a file and shortening of the time amount concerning download are attained by generating information and transmitting to a terminal equipment.

In order to solve the above-mentioned technical problem, (2) This invention In the information distribution system equipped with the function to transmit the information currently held according to access from a terminal equipment on a server to a terminal equipment a server computer It has the information upgraded among the information currently held, and its old information. It has an information generation means. old information and the upgraded information -- difference -- the difference which generates information -- a terminal equipment

a means to upgrade the information which a terminal equipment holds to the newest information -- having -- the difference from a server computer -- the time of information being transmitted -- the difference -- it is the information distribution system characterized by generating the information upgraded based on the information which information and a terminal equipment hold.

[0005] therefore, the difference from the information to which this invention was upgraded, and its old information -- contraction-izing of a file and shortening of the time amount concerning download are attained by having a means to generate information. Moreover, it is also possible to provide with the record medium which recorded the program for realizing each above configuration means.

[0006]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing.

(Gestalt of the 1st operation) Drawing 1 is the block block diagram showing the gestalt of one example of the file distribution system concerning this invention, and a record medium. the difference from the communications department 3 which performs the communication link of a network computer 2 (terminal

equipment), and a server 1 and a network computer 2 in which this file distribution system had local storage, such as a server 1, a hard disk, and a flash memory, the software 31 of an old version, and the software 32 of a high version -- the difference which creates information -- the information creation section 4 and difference -- the difference created in the information creation section 4 -- it consists of the file composition section 5 which creates the software 32 of a high version from the information file 33 and the software 31 of an old version. The software 31 of an earlier version is beforehand installed in the server 1. (When the software 31 of an earlier version is not installed, it becomes the software 32 of a high version with new install.) if additional install of the software 32 of an upgrade product is carried out here -- difference -- the information creation section 4 -- the difference from the software 31 of an earlier version, and the software 32 of an upgrade product -- the information file 33 is created.

[0007] drawing 2 -- difference -- the difference created in the information creation section 4 -- the configuration of the information file 33 is shown. difference -- the information file 33 consists of three object file lists and two stereo file groups. Although the object file list is used by the file list 331 for deletion which is a list of files no longer using in an upgrade product although it was used in the earlier

version, the file list 332 for an addition which is a list of files newly added by the upgrade product, and both versions, it consists of a file list 333 for updating which is a list of files with which the contents are updated. A stereo file group consists of an addition-file stereo 334 which is a stereo of a file added, and an update file stereo 335 which is a stereo of a file updated. next -- drawing 3 -- difference -- the difference by the information creation section 4 -- the outline of creation processing of the information file 33 is shown. the difference from the file list 321 which constitutes the file list 311 which constitutes the software 31 of an earlier version, and the software 32 of an upgrade product -- the file list 331 for deletion, the file list 332 for an addition, and the file list 333 for updating are created among the information files 33.

[0008] moreover, the difference from the software 31 of an earlier version, and the software 32 of an upgrade product -- the addition-file stereo 334 and the update file stereo 335 are created among the information files 33. next -- drawing 4 -- difference -- the difference by the information creation section 4 -- creation processing actuation of the information file 33 is shown. if additional install of the software 32 of an upgrade product is carried out at a server 1 -- difference -- the information creation section 4 -- the difference from the software

31 of an earlier version, and the software 32 of an upgrade product -- the information file 33 is created. First, if additional install of the software 32 of an upgrade product is carried out, the file list 331 for deletion, the file list 332 for an addition, and the file list 333 for updating will be initialized (S1). If it is judged whether the software 31 of the earlier version of the installed software exists in a server 1 (S2) and it exists, it will be judged whether each of the file list 311 which constitutes the software of an earlier version exists in the file list 321 which constitutes the software of an upgrade product (S3). In not existing here, it adds that to the file list 331 for deletion (S4). It is judged whether if it seems that it exists, it is the same as the software 32 of an upgrade product (S5), and if not the same, it will be added to the file list 333 for updating (S6).

[0009] When the software 31 of an earlier version is installed in the server 1, the processing to the above is omitted. Next, it is judged whether each of the file list 321 which constitutes the software of an upgrade product exists in the file list 333 for updating (S7), and if it does not exist, it is added to the file list 331 for an addition (S8). thus, difference -- three object file lists are created among the information files 33. Moreover, about the addition-file stereo 334 of a stereo file group, and the update file stereo 335, it is the same as that of the file which

constitutes the software of the upgrade product which exists in addition/updating file list, respectively. Next, drawing 5 shows the outline of the synthetic processing of a file depended file composition section 5. the inside of a network computer 2 -- the software 31 of an earlier version, and difference -- the information file 33 is compounded, and the software 32 of an upgrade product is created and saved. Next, drawing 6 shows the synthetic processing actuation of a file depended file composition section 5. the case where the check of the version of the software on local storage and the software on a server 1 was performed, it was judged whether the software by the side of a server 1 is newer (S11), and it is judged that it is new when the network computer 2 was started -- difference -- the file list 331 for deletion, the file list 332 for an addition, and the file list 333 for updating download among the information files 33 using means of communications 3 from a server 1 (S12). When it is not judged that it is new, software in local storage is performed.

[0010] Next, based on the file list 331 for deletion, the file which constitutes the software of the earlier version in local storage is deleted (S13). Next, the addition-file stereo 334 and the update file stereo 335 download using means of communications 3 from a server 1 (S14). And based on the file list 332 for an

addition, and the file list 333 for updating, the addition-file stereo 334 and the update file stereo 335 which were downloaded are stored in local storage. Thus, the software 31 of an earlier version is updated by the software 32 of an upgrade product, and is started on a network computer 2. therefore, the time of performing bar JOAAPPU of software according to the gestalt of the above operations -- the difference from a server -- contraction-izing of a file and shortening of the time amount concerning download are attained by downloading only information. In addition, with the gestalt of the above-mentioned implementation, although the update file stereo 335 was used, it is also possible to make this into an updating patch file, and-izing of the file to download can be further carried out [ \*\*\*\* ] by making a stereo into difference. In addition, in the range which does not deviate from the summary, this invention deforms variously and can be carried out.

[Effect of the Invention] although download of software performs bar JOAAPPU according to this invention when the version of the file by the side of a terminal is old as explained above -- the difference from a server -- contraction-izing of a file and shortening of the time amount concerning download are attained by downloading only information.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] Drawing explaining the gestalt of one example of the information distribution system concerning this invention, an information distribution server,



a terminal equipment, and a record medium.

[Drawing 2] the difference of the information distribution system shown in drawing 1 -- drawing explaining the configuration of the information file 33.

[Drawing 3] the difference of the information distribution system shown in drawing 1 -- drawing explaining the information flow in creation processing of the information file 33.

[Drawing 4] The flow chart explaining an example of the program recorded on the processing actuation by the side of the server of the information distribution system shown in drawing 1 , and a record medium.

[Drawing 5] Drawing explaining the information flow in synthetic processing of the file of the file composition section 5 of the information distribution system shown in drawing 1 .

[Drawing 6] The flow chart explaining an example of the program recorded on the processing actuation by the side of the network computer 2 of the information distribution system shown in drawing 1 , and a record medium.

[Description of Notations]

1 -- Server

2 -- Network computer

3 -- Communications department

4 -- difference -- the information creation section

5 -- File composition section